

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US03/29167

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A61K 39/385, 39/02, 39/09, 39/00  
US CL : 424/197.11, 234.1, 244.1, 184.1, 236.1, 831

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

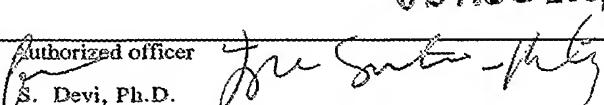
U.S. : 424/197.11, 234.1, 244.1, 184.1, 236.1, 831

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|------------------------------------------------------------------------------------|-----------------------|
| Y          | WO 02/34771 A2 (CHIRON S.P.A.) 02 May 2002 (02.05.2002), pages 7, 841 and 842.     | 1-17                  |
| Y          | US 6,372,222 B1 (MICHON et al) 16 April 2002 (16.04.2002), claims and Examples.    | 1-17                  |
| Y          | US 6,426,074 B1 (MICHEL et al.) 30 July 2002 (30.06.2002), Example 14.             | 1-17                  |

|                                                                                                             |                                                                                                                                                                     |                                                                                                        |                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/>                                                                                    | Further documents are listed in the continuation of Box C.                                                                                                          | <input type="checkbox"/>                                                                               | See patent family annex.                                                                                                                                                                                                                     |
| *                                                                                                           | Special categories of cited documents:                                                                                                                              | "T"                                                                                                    | later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention                                              |
| "A"                                                                                                         | document defining the general state of the art which is not considered to be of particular relevance                                                                | "X"                                                                                                    | document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone                                                                     |
| "E"                                                                                                         | earlier application or patent published on or after the international filing date                                                                                   | "Y"                                                                                                    | document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "L"                                                                                                         | document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "&"                                                                                                    | document member of the same patent family                                                                                                                                                                                                    |
| "Q"                                                                                                         | document referring to an oral disclosure, use, exhibition or other means                                                                                            |                                                                                                        |                                                                                                                                                                                                                                              |
| "P"                                                                                                         | document published prior to the international filing date but later than the priority date claimed                                                                  |                                                                                                        |                                                                                                                                                                                                                                              |
| Date of the actual completion of the international search                                                   |                                                                                                                                                                     | Date of mailing of the international search report                                                     |                                                                                                                                                                                                                                              |
| 15 April 2004 (15.04.2004)                                                                                  |                                                                                                                                                                     | 02 AUG 2004                                                                                            |                                                                                                                                                                                                                                              |
| Name and mailing address of the ISA/US                                                                      |                                                                                                                                                                     | Authorized officer                                                                                     |                                                                                                                                                                                                                                              |
| Mail Stop PCT, Attn: ISA/US<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, Virginia 22313-1450 |                                                                                                                                                                     | <br>S. Devi, Ph.D. |                                                                                                                                                                                                                                              |
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**Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.  
No protest accompanied the payment of additional search fees.

**BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:

GBS saccharide antigen species: serotype Ia; serotype Ib; and serotype III.

The claims are deemed to correspond to the species listed above in the following manner:  
Claims 1 and 17.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons:

The saccharide antigen species listed above do not share significant structural elements and immunogenic specificity.

**Continuation of B. FIELDS SEARCHED Item 3:**

DIALOG, WEST, EMBASE, BIOSIS, MEDLINE

GBS or group B streptococci, (Ia or Ib or III), GBS79, GBS80 to GBS 691, inventor's name